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Exploring the acceptability of using low-friction bedding for patients with burns: Qualitative results from the SILKIE study

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ABSTRACT

Background: Skin grafts following deep burns are needed to ensure healing. Grafts that fail and require re-grafting cause significant distress to patients and additional costs for the NHS. Shearing, which leads to graft loss, may be reduced through the use of low-friction bedding. A feasibility study was conducted to assess proof of concept for the use of low-friction bedding for patients with burns. Patient, parent and staff views on the acceptability of this material were explored through semi-structured interviews.

Method: Patient views were gathered through telephone interviews (n=17; 11 adult patients and 6 parents of child patients). One patient completed the questionnaire in written form because of hearing difficulties. Staff views were gathered at two time points: at the start of the study through open-ended questionnaires (n=20) and at the end of the study through focus group (n=12) and telephone interviews (n=3). Data were analysed using framework analysis.

Results: Three themes were identified describing both patient and staff views of the sheets: *Slippery feel of the sheets; leaking wounds and sheet changes;* and *movement and friction.* Overall patients' views of the sheets were positive; they were comfortable to use the sheets and experienced reduced pain and itching. However, issues related to the slipperiness were highlighted. Staff views were largely negative because of difficulty in use, lack of absorbency, and increased workload.

Conclusion: The use of low-friction bedding is acceptable to patients undergoing a skin graft following a burn injury; however, problems related to sliding down the bed and soiling of sheets need addressing. Staff were supportive of the concept of low-friction bedding; however, they reported significant challenges in day-to-day use of sheets. Low-friction bedding presents a promising alternative to standard cotton sheets for patients with burns and those at risk of pressure sores; however, further work is needed to address current challenges in use.

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1. Introduction

Skin grafts are required to ensure healing after burns that are deep or take longer than 21 days to heal. Each year, approximately 1000 skin grafts are undertaken in England and Wales; 75% in adults and 25% in children [1]. Approximately 20% will fail completely or partially, with some wounds needing re-grafting [2]. Further surgery, taking skin from another part of the body, longer hospital stays, and increased scarring are all consequences that can be distressing for patients and expensive for the NHS [3,4].

Graft loss can be caused by rubbing or stretching the skin, which shifts new graft cells, thereby causing failure of attachment to the wound. It is thought that friction between dressings and bed sheets can cause this rubbing or stretching that results in shearing [5]. Further, it is believed that if dressings and patients were able to slide over the sheet when the patient moves in bed, then the graft may have more chance of 'taking'.

In the UK, bedding and clothing with reduced friction have been successfully used to reduce pressure sores by minimising friction between the skin and hospital bed [6–9]. It is likely that similar products could be used within burns services to prevent graft loss. Currently, no burns service that undertakes skin grafting has assessed a package of care involving low-friction bedding. However, dressings with a low friction covering have been used in some burns services for skin grafts and are anecdotally believed to improve skin graft success rates.

In 2015, a feasibility non-randomised study based in Bristol, UK (called SILKIE), was conducted to report whether it is possible to use low-friction bedding within the burns service following a skin graft. A range of low-friction medical products are available, including bedding and clothing. They are reusable and washable and designed to offer greater ease of movement and comfort to patients whilst in bed, including patients suffering from fragile skin conditions and patients with skin grafts. The sheets have a low-friction panel that covers most of the flat area of the mattress. Clinicians at two sites raised potential safety concerns about slips and falls from bed due to the bedding and tissue viability concerns including moisture lesions and fungal infections. Risk assessments were carried out at each site for manual handling including slip/fall risks; infection control and tissue viability teams at each site had to 'sign off' the use of products based on their own assessment of these risks. The aim of the study was to explore the feasibility of using a reduced friction nursing package including low-friction bedding to reduce shearing and thereby reduce skin graft loss in the first few days post surgery in patients with burn injuries. Bedding used included a bedsheet and pillow case. Results of the trial are being prepared for publication.

As part of this work, an integrated qualitative study was carried out to explore staff and patient views of the sheets. This paper presents these qualitative findings.

2. Method

2.1. Patients

Patients were recruited to the SILKIE feasibility study from specialist burns services at three hospital trusts (Site A for children, Site B for adults, and Site C for adults and children). Eligible participants were in-patients undergoing a skin graft for a burn injury who stayed at least one night in hospital, were not ventilated, were not on inotropes, did not have a vacuum-assisted closure (VAC) dressing, were able to speak and understand English or a translator was available, and had the mental capacity to give informed consent to undertake an interview. This included adult patients, parents of children under 16 years of age, and young people aged 16–18 years. Patients eligible for inclusion in the interview study were approached by a member of the study team at each site and provided with a patient information sheet. Details of interested patients were then passed on to the research team. All interested participants were contacted by phone and invited to take part in a telephone interview. Purposive sampling was used to ensure maximum variation in the sample with regard to demographic characteristics. In total, 36 potential participants were identified, and 18 participants were not interviewed for the following reasons: six could not be contacted, four declined, eight patient details were not sent on. Recruitment and final sample size were guided by the concept of 'information power' [10]. Given the specificity of the sample, focused study aims, and data collection methods, a sample size of 17 patients was considered sufficient. A CONSORT diagram of patient recruitment is shown in Fig. 1.

2.2. Staff

Nursing staff from all sites with experience of using the SILKIE sheets or who were involved in organising the study were invited to provide feedback on their experiences. Feedback was gathered at two time points, at the start and end of the study. At the start of the study, staff were asked to complete feedback forms, and at the end, they were invited to take part in focus groups or one-to-one interviews. Small focus group sessions were held at sites A and B; staff at site C were interviewed individually by telephone.

Topic guides for the semi-structured interviews were developed using reviews of the literature, study team knowledge and clinical experience. The patient topic guide covered experiences of using the sheets, the impact of the sheets on their skin graft, and experiences post-discharge. The staff topic guide covered practical experiences of using the sheets, their views on patient impact, training to use the sheets and laundry and sheet changes.

Telephone interviews were conducted between December 2015 and November 2016 by one female researcher (KW) with extensive experience of qualitative research. All participants provided written consent. One patient completed an open-ended questionnaire because of hearing difficulties that prevented a telephone interview. Staff focus group sessions were conducted jointly by two researchers KW and JI. JI was the senior qualitative researcher of the study.

Data were recorded using an encrypted audio recorder. Data collection and analysis were conducted in parallel after the first 5 interviews. Interviews and focus groups were recorded, fully transcribed and then imported into the software package NVivo 10. Data were analysed using a framework analysis approach [11,12]. The Framework Method is appropriate for thematic analysis of interview transcripts

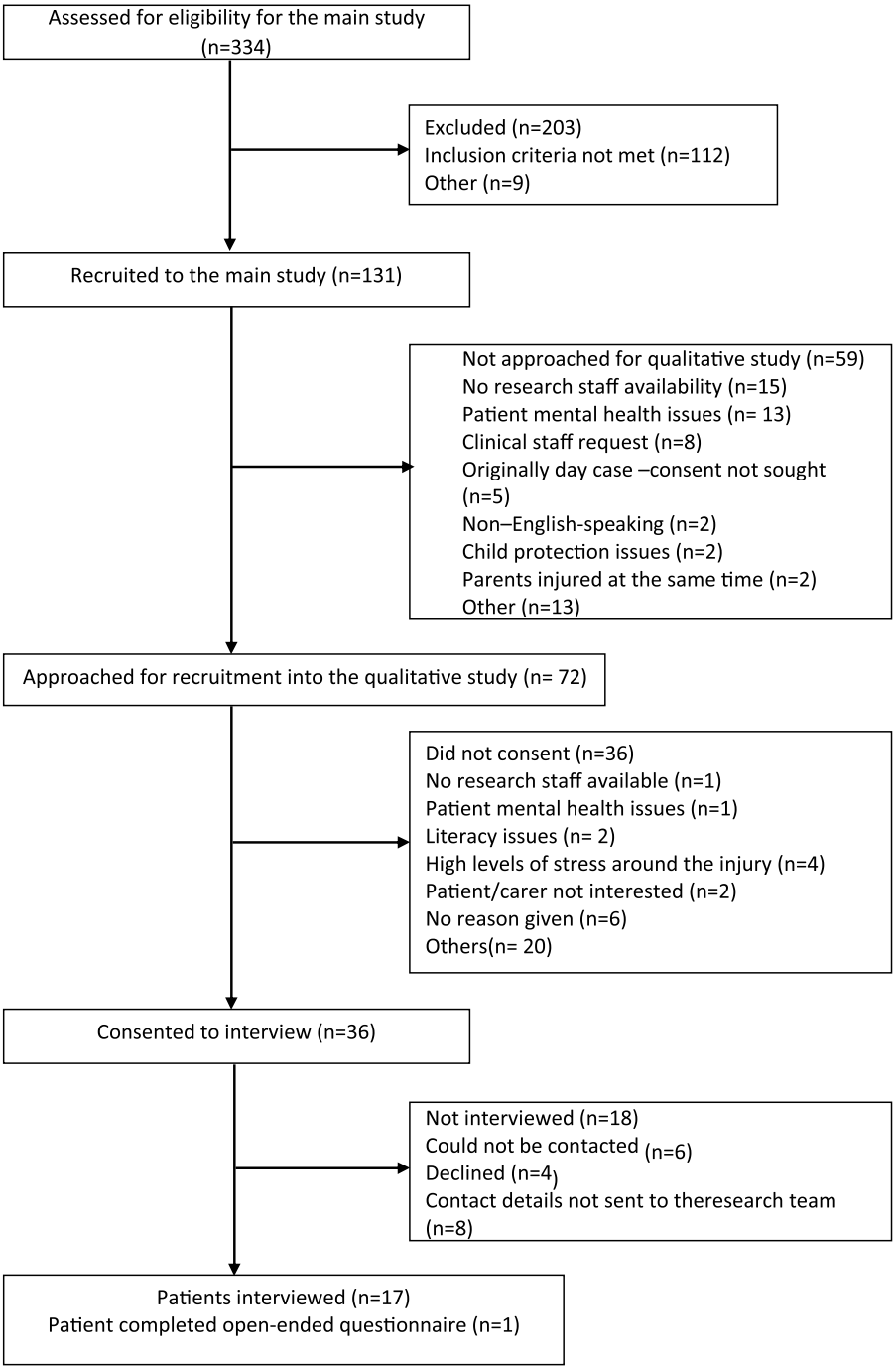

Fig. 1 – CONSORT diagram of patient recruitment for the qualitative study.

where it is important to be able to compare and contrast data by themes across many cases, while also keeping each perspective in context. Patient and staff data were coded using a deductive approach guided by the research question. Following the initial coding, themes and sub-themes were developed and the research team charted these into the framework matrix for all patient and staff data to produce a summary table. The process was facilitated using the NVivo 10 software package [13].

Ethical approval was granted by Wales Rec 4 (15/WA/0156) on 25/06/2017.

3. Results

3.1. *Sample description*

Interviews were conducted with 17 participants: 11 adult patients and 6 parents of child patients (see Table 1 for patient characteristics). Patient interviews lasted between 4 and 25 min (mean 11 min). Feedback forms were received from 20 staff (4 site A, 4 site B, 12 site C). Fifteen staff were included in the end of study feedback: 6 small focus groups

Table 1 – Patient characteristics.

Participant	Interviewee	Age	Gender	Hospital site
P1	Mother	12 years	Female	A
P2	Mother	11 months	Male	A
P6	Patient	Not given	Male	B
P8	Patient	Not given	Female	B
P10	Father	4 years 10 months	Male	A
P11	Mother	20 months	Male	A
P12	Patient	58 years	Female	B
P15	Patient	33 years	Female	B
P19	Patient	88 years	Female	C
P20	Patient	26 years	Male	B
P21	Patient	52 years	Female	C
P23	Patient	37 years	Male	B
P24	Patient	16 years	Male	A
P25	Mother	16 months	Male	A
P26	Patient	38 years	Female	B
P35	Patient	50 years	Male	B
P36	Patient	67 years	Male	C
P38	Father	1 year 1 month	Female	A

were conducted with 12 staff in total (8 Site A and 4 site B); telephone interviews were conducted with 3 staff from site C.

Three themes were identified from the data describing both patient and staff views of the sheets: *Slippery feel of the sheets; leaking wounds and sheet changes; movement and friction*. Table 2 provides an overview of the themes.

3.2. *Theme 1: slippery feel of the sheets*

3.2.1. *Patients*

Comfortable and smooth: Overall, patients reported positive experiences of the feel of the sheets and mentioned that the sheets were comfortable, smooth and pleasant to use.

> *"Far more comfortable than the normal sheets. If I could get them for my home I would trust me".* (P12; adult female)

> *" . . . the whole feel of it, it's almost like another skin, it's so comfortable".* (P8; adult female)

Reduced pain and itching: The slippery feel of the sheets reduced roughness against the skin and dressings, with patients reporting reduced pain and itching. One parent described how the sheets prevented her son from scratching his graft against the sheet, which had a positive impact on healing.

> *"Well he wasn't able to itch on them . . . he wriggles, like his bottom, because along the top of his . . . what was like the top of his nappy area there's like a scar there, and he kind of wriggles the itch there, and he definitely like must get some . . . purchase on that . . . the sheets that he normally has, and then I'm sure he probably didn't get as much on that."* (P2; mother)

An adult patient described how the slippery feel of the sheets made them less painful to lie on as compared to normal cotton sheets.

> *" . . . [you] don't actually stick to them, very sort of gentle on the dressings and everything, so they were very comfortable, I would recommend them for a burns victim because as I say they don't stick, and the [cotton] sheets that they were putting on the beds unfortunately they did stick to the dressings and things like that before I had the skin grafts, and it was quite painful."* (P8; adult male)

Temperature control: The impact of the sheets on temperature control was mixed. The majority of patients reported

Table 2 – Patient and staff themes and sub-themes.

	Theme 1: Slippery feel of the sheets	Theme 2: leaking wounds and sheet changes	Theme 3: Movement and friction
Patient	Comfortable and smooth Reduced pain and itching Temperature control	Leaking wounds and increased sheet changes	Sliding down the bed Slipping Holding children Getting out of bed
Staff	Difficult to use	Soiling and appearance of sheets Lack of absorbancy and increased pooling Increasing sheet changes and staff time Availability of sheets	Sliding down the bed Slipping out of the bed Moving patients easier

that they found the sheets cooler to use and that the sheets reduced sweating.

"She said she found it you know relatively comfortable and quite cooling, because it was very hot in the hospital". (P1; mother)

"Yeah, I was pretty amazed really because hospital sheets are horrible at the best of times, and of course with a plastic mattress you normally sweat, then you get stuck to it, well you didn't with these sheets". (P8; adult male)

In contrast, one participant said that she found the sheets hotter and sweatier to use than cotton sheets, as they were less absorbent.

"They were still very hot, very sweaty. The heat· · ·When you have burns you have a lot of oozing and you know you're boiling hot and then you're sweating, and it's horrible. I just think that cotton and linen are better products for when you're oozing and sweating". (P21; adult female)

3.2.2. *Staff*

Difficult to use on beds: Staff reported that the slippery nature of the sheets made them more challenging to put on the bed and stay in place compared to cotton sheets. Two staff were often needed to make up the beds as the sheets easily slipped out of place.

" . . . they're a bit difficult to get on the bed with one person, because they're so slippery as well, the SILKIE [low friction] bit in the middle, trying to unravel it if you've got someone just trying to do it by yourself really."

Several staff reported that the size of the sheets was problematic as they were slightly too small for many of the adult beds. This meant that traditional hospital corners were not possible and the sheets frequently came untucked or bunched up.

"[they are too small so] you can't tuck them under properly, so where they are so slidey and the mattresses are slidey they do come untucked quite a lot . . . they don't stay in place."

3.3. *Theme 2: leaking wounds and sheet changes*

3.3.1. *Patients*

Leaking wounds: Due to the nature of burn injuries and skin grafts, patients experience high levels of wound leakage. Normal protocol for leakage is to use absorbent pads on top of the sheets to absorb fluid and reduce soiling of the sheets. However, the protocol for the SILKIE study prevented the use of additional materials between the patient and sheet, thereby increasing the level of sheet soiling and frequency of sheet changes.

Changing sheets: Patients reported negative experiences of leakage and sheet soiling as the increased frequency of sheet changes was disruptive and painful.

"I was having to change his sheets daily because they were like pussey and thick with blood and everything on them as well". (P11; mother)

Despite the increased soiling, a few patients reported that the sheets were not changed regularly, causing them to lie on dirty soiled sheets for extended periods of time.

"In terms of the how regularly they were changed, I don't believe they did a change whilst we were there, I don't know if that's normal or not, for them to change the sheets during that duration . . . once the sheets had been put on the bed I think he was probably only in hospital for probably another four days I would think. But by the time we left they were quite grubby, he had got a lot of antibiotics and things like that had been spilt all over it". (P25; mother)

3.3.2. *Staff*

Frequent sheet changes: Nursing staff also reported on the level of wound leakage and the need for increased frequency of sheet changes. As they were unable to use absorbent pads, the sheets quickly became wet and soiled.

"The main thing is a lot of people say about soiling and getting it wet, you have to change the whole sheet because we can't put anything on to protect it from . . . like our cotton we just put an Inco under them between the sheet, change that every time, whereas we have to change the whole sheet, and when they're oozing . . . "

"The reservations I've got about them is that they don't absorb anything, and so I find that children whose burns ooze through the dressings are sat in the liquid, whereas on the cotton sheets we would put an Inco, which is an absorbent paper sheet between the sheet and the patient, and then change those frequently. So I found that to be a big drawback really."

Some staff had tried to address this by putting absorbent pads inside the low friction pillow cases. This technique had been moderately successful, and although this approach increased the demand for pillowcases, it reduced the need to change the sheets.

Sheet availability: The high frequency of sheet changes had a knock-on effect on sheet availability and laundry. On a few occasions, the amount of oozing in patients with large burns meant that stock levels of sheets had become very low and wards were at risk of running out.

"When we've got big burns and they have grafted a lot of them, because they ooze so much they get really wet, and you have to change them sometimes six/seven times, and we've got to the point where we're like we're running out."

All sites had introduced specific laundry procedures for these sheets in order to separate them from general laundry and keep track of stock. Despite this, all sites had experienced problems with laundry such as misplacing sheets, or staff putting them in incorrect laundry bins.

"Remembering to bag them in the right bag afterwards to go laundry. That's the only thing, it's just being extra vigilant. I think the sheets they're easy to tell if they're SILKIE sheets. Pillowcases now and again . . . at a quick glance you don't notice a difference between the SILKIE and normal, and therefore I just usually go through the linen again, the dirty linen again and make sure that the right SILKIE is in the right ones and cotton are in the right ones."

"Sometimes the nurses don't know that they're on it, or forget that they're on it and can't be bothered to go and get a sheet if they run out, or can't be bothered to put it into the right bin, and it will go into a normal bin, because I must admit some of them are like that."

Some staff reported that the need for different laundry procedures and sorting also increased their workload.

" . . . it was a little bit of an, oh right okay where do I find them? Okay, how do I get rid of them now that they need to be cleaned? And then it was a faff to try and find the little docket that you've got to fill in, and then it's got to be bagged in a blue bag. It all seemed very just increasing already very busy workload, which that just sounds like me being moany, I do realise that, but when you've got lots and lots of things to do and you can't just find a simple docket in order to get a sheet to the laundry to be cleaned it's very frustrating."

3.4. *Theme 3: movement and friction*

3.4.1. *Patients*

Sliding down the bed: Patients had some concerns regarding safety which stemmed from the slippery nature of the sheets. Both adult patients and parents of children reported that they frequently slid down the bed. Adults said they had to push themselves back up the bed in order to get comfortable, which was challenging due to the grafts and could be painful.

"You're slipping. Now I'd spent a week being told not to move because I just had my legs all skin grafted, so having to be still, imagine that same bandaging which goes on every day, if you're slipping you're slipping, there's nothing you can do about it, and if you're not strong enough and you're dosed to the hilt with morphine pump you don't have an awful lot of control over where your body is being held." (P21; adult female)

Sliding down the bed was a particular concern for small children. Parents said that the child patients regularly slid down the bed and ended up at the bottom.

"After he had his general anaesthetic they propped up the cot mattress so that he was elevated, and when that was done he kept sliding down. I mean he might well have been wriggling, because he's a wriggly child, but he was ending up kind of at the bottom of the cot with his legs kind of poking out the bars, and that was obviously quite uncomfortable for him, and he kept waking up at that point." (P1; mother)

Holding children: Parents also reported challenges in picking up and holding small children. The study protocol was that children should be held using a SILKIE sheet; however, the material and large size of the sheets made this difficult. Although parents did not feel this was dangerous, they did report it as a negative point.

"We were quite careful that when we picked him up and held him that we used the sheets . . . but obviously as time went on over those three days he was getting more and more active so he was needing to be picked up during the night, and he was quite wriggly. So, it was quite unmanageable at times with the sheet, because it kind of they would get in the way of things like that, because they're big aren't they?" (P2; mother)

"Well there was one time actually where he did slip in my arms a bit, but to be honest like babies wriggle and they slip anyway, so it probably did make him a little bit more slippery but I didn't think it was dangerous". (P2; mother)

Getting out of bed: In contrast, adult patients and parents of older children reported that the slippery nature of the sheets was beneficial in helping them to get out of bed. Many had reduced mobility due to the location of their graft, and the slipperiness of the sheets helped them to move more easily to the edge of the bed.

"The only part of me that really benefitted from it was, well the fact that they're . . . you can slip off of them which is brilliant". (P12; adult female)

"She couldn't get to the bathroom so we were using the commode right beside her bed, and she moved quite easily I would say on and off the bed, so I don't know if that was . . . I don't know what it's normally like with patients moving from . . . gliding form bed to commode, but she managed that quite well." (P1; mother)

3.4.2. *Staff*

Sliding down the bed: Nursing staff echoed the patients' concerns regarding sliding down the bed and holding small children. Many had noticed patients sliding down to bottom of the bed and questioned whether this was undoing the benefit of reduced friction on the graft by increasing patients' movement.

" . . . you're giving something slippery against them . . . they're sliding down, you're making them slide more, and [as a consequence] having to move them more."

Staff members also expressed the same concerns as parents with regard to sliding down of small children to the bottom of the bed.

"Well I couldn't help but notice that one sliding down the bed, so that was a big thing for my one because it was a little baby, he was only just one year old, but because he hadn't been sleeping very well mum was sleeping in the bed with him, so of course we were putting this tiny baby in an enormous bed, and then of course he would start at the top and then whoosh would just not that dramatically obviously but it became very noticeable."

Parents holding their child: Challenges for parents holding small children were also raised. Staff reported the same issues as parents with regard to the size of sheets and also reported that due to these challenges, many parents stopped using the sheets to hold their children. Staff also commented that parents' natural priority was to comfort their child; therefore, many reinforcement and reminders were needed to get them to use the sheets.

"Their child is crying she picks her child up, cuddles her child, as you would do normally. The last thing you're going to think about is hang on a sec, I need to get this extra little sheet."

" . . . it's just your natural instinct isn't it? Your child is crying you then pick them up. So a lot of the time mum has got other things on her mind hasn't she? From every time I went in then she was holding him, I would be like, 'Oh well here's the sheet, shall we use this sheet?'"

Easier to move patients: The slippery nature of the sheets, however, made it easier for staff to move patients whilst they were on the bed.

"I think it is definitely easier to move the patients . . . which is good and bad, so it's they do move when you don't want them to move, but when you do want them to move then it definitely it is easier. It's almost like having a built in slide sheet I guess, that sort of which is what we used with manual handling, that type of thing."

"Yeah, if you have to move a patient around to wash or anything, or get them up the bed, anything like that, the sheets are helpful."

4. Discussion

Patients were predominantly positive about the low-friction bedding and reported that it was comfortable to use and reduced pain and itching. However, patients and parents also reported that the slipperiness of the sheets frequently caused them to slide down the bed and made holding small children challenging. Nursing staff were less positive about using the sheets as they felt that the frequent sheet changes needed with the less absorbent sheets caused more work. However, they found it easy to move patients on the sheets.

4.1. *Comparison with other studies*

No other qualitative work has been conducted in relation to experiences of using low-friction bedding in a hospital setting; therefore, it is not clear whether these results are comparable to other patient groups using low-friction bedding. Clinical results reported in relation to the use of low-friction underwear and booties to reduce pressure sores demonstrated a significant reduction in ulcers and better healing [6–9]. Whilst no data on patient or nursing experiences are reported in either study, it is reasonable to infer that similar reductions in pain and itching may have been found. Staff concerns about patients falling out of bed or contracting more fungal infections were not reported in the study as being more frequent than that in the usual nursing environment.

4.2. *Implications for practice*

As burn injuries and skin grafts are naturally wet wounds and produce exudate as part of the healing process, leaking from dressings is common. Standard in-bed care for dealing with leaking wounds is to use absorbent pads. These pads are placed between the patient and the bed to absorb fluid and protect bedding from excessing soiling. In a low-friction environment, the use of absorbent pads is not possible as they cause friction between the patient and the bed and undermine the potential benefits of the low-friction bedding. Staff in the current study reported ongoing issues with wound leakage and increased sheet soiling. Furthermore, the material structure of the bedding meant that the fabric was less absorbent than standard cotton bedding, and caused any fluid to pool on the sheets. The increase in sheet soiling necessitated more frequent sheet changes, thereby increasing staff workload and creating additional discomfort for patients. Wound leakage is particularly problematic in burns patients and when either cotton or cotton/polyester sheets become wet, this significantly increases their coefficient of friction [14]. A surface with a high coefficient of friction increases the risk of graft loss and the likelihood of developing pressure ulcers; therefore, materials with reduced friction (both dry and wet) are important for patient care. In a study by Biesecker and colleagues [14], the increased wound leakage problem was addressed through the use of highly absorbent underpads with low-friction polyolefin support. If the underpads have an equivalent coefficient of friction to the bedding, this may offer a solution to the problems faced in the current study.

The low-friction bedding used in our study consisted of a pillowcase and flat sheet. Standard cotton sheets are kept in place on hospital beds through the use of tight corner tucking. The slippery nature of the low friction sheets made achieving tight corner tucking challenging. In addition, the reduced friction against the bed meant that they frequently slipped out of place. This was particularly problematic when patients were sleeping, as their movement in the bed untucked the sheets. Not only was this uncomfortable for the patients, but it meant that grafts were resting against the bed itself rather than the low-friction sheets, thus removing the benefit of the low-friction environment. One solution to this problem is the use of fitted sheets with elasticated corners; however, as modern hospital beds are design to move different sections of the bed up and down, fitted sheets may cause a 'hammock' effect if parts of the bed are raised. In discussion with nurses in the present study, it was felt that sheets with fitted top corners only might be an appropriate solution. This design would keep the sheets on the bed but not cause any dipping or 'hammocking' when the bed is in a raised position. Alternative approaches could be to replace the bedding with a gown made of the same material or add an outer cover of low-friction material to the dressing. Gowns would ensure that patients were constantly in contact with the low-friction

material and remove the challenges of keeping the sheets in place, but again they often ruckle up under the patient. Low-friction outer covers for bandages would move across the normal sheets, and the current bandages move across the low-friction bedding. Fewer bed changes would be required when leaking occurs as absorbent pads could be used, and when extra layers of padding are needed, a new bandage and outer cover could be applied with no additional risk to the graft.

4.3. *Strengths and limitations of the study*

As with any qualitative study, a relatively small number of patients and staff were interviewed, but we feel that saturation was reached in that no new themes were arising from the data towards the end of the interviews. The difficulties in contacting patients and parents from one trust was thought to be due to the patient group who were admitted with serious burns in their area who were not amenable to being interviewed. Contacting hard-to-reach groups is often problematic for qualitative researchers who are not known to the patients. However, we feel that there was a good spread of demographic characteristics to include most relevant patient and staff perspectives.

A number of the interviews were short due to the patients contacted having very little feedback to offer. Whilst this reduces the opportunity for in-depth phenomenological analysis of these data, we have maximised the data available using framework analysis. Although short, data from these interviews are still valid and useful in guiding clinical use of low-friction bedding.

5. Conclusion

Low-friction bedding is acceptable to patients who have undergone a skin graft following a burn injury. Patients find this bedding comfortable to use and anecdotally report lower friction to their graft site. However, patients reported frequently sliding down the bed, and parents experienced difficulties in holding children. The wet nature of burn injuries and skin grafts causes significant leaking and soiling of bedding, which increases staff work time due to more frequent sheet changes. Normal methods for dealing with this, such as absorbent pads, are not appropriate in a low-friction environment; however, low-friction underpads with polyolefin support, gowns or low-friction outer covers are potential alternatives.

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Conflict of interest

No conflicts of interest have been reported.

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